

MOLECULAR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

MPET 5500w. SCIENTIFIC COMMUNICATION. (1 cr; S-N) Brimijoin

This class offers training in written scientific communication in the form of abstracts, research articles, posters, and grant applications. Students can be at any stage of training but should be actively engaged in writing for publication at the time of enrollment.

*MPET 5800f,w,s. PHARMACOLOGY AND THERAPEUTICS. (9 cr for series MPET 5801 through MPET 5806; A-F; prereq a good background in vertebrate physiology and general biochemistry at the college or graduate level) Terzic and staff

Survey course on the pharmacology of specific organ systems including the pulmonic nervous system, central nervous system, cardiovascular, renal, and gastrointestinal systems, as well as antibiotics, cancer chemotherapy and endocrine pharmacology.

*MPET 5801f. GENERAL PHARMACOLOGY I. (1-2 cr; A-F) Terzic and staff

*MPET 5802f. GENERAL PHARMACOLOGY II. (1-2 cr [depending on breaks that occur]; A-F; prereq MPET 5801) Terzic and staff

*MPET 5803w. GENERAL PHARMACOLOGY III. (1-2 cr.[depending on breaks that occur]; A-F; prereq MPET 5801, MPET 5802) Terzic and staff

*MPET 5804w. GENERAL PHARMACOLOGY IV. (1-2 cr; A-F; prereq MPET 5807) Terzic and staff

*MPET 5805w. GENERAL PHARMACOLOGY V. (1-2 cr; A-F; prereq MPET 5807) Terzic and staff

*MPET 5806s. GENERAL PHARMACOLOGY VI. (1-2 cr; A-F; prereq MPET 5807) Terzic and staff

*MPET 5807f. GENERAL PHARMACOLOGY I-III. (5 cr for series MPET 5801, MPET 5802, and MPET 5803; A-F) Terzic and staff

Survey course on the pharmacology of specific organ systems. Molecular Pharmacology and Experimental Therapeutics Ph.D. students must register for this class. * Credits determined prior to course start date each year.

MPET 8000w. ESSENTIALS IN PATCH CLAMP TECHNIQUE. (2 cr; A-F) Terzic, Alekseev

An introduction to patch clamp electronics and ion channel measurements. A limited number of students pursuing research with patch clamp techniques will be accepted.

MPET 8100w,f,s. MASTER'S PROJECT. (3 cr; S/N) Staff The Master's project will consist of a scholarly written review of a topical area in pharmacology. The review will describe the current state of understanding of the topic, identify an important question related to the topic, and describe potential future directions and experimental strategies to address the question. The topic will be chosen by the student in consultation with a faculty advisor with full or associate graduate privileges and the student's advisory committee. The student's committee will evaluate the scope and content of the Master's Project.

MPET 8205f,w,s. CLINICAL PHARMACOLOGY JOURNAL CLUB. (1 cr/yr; S-N) Weinshilbom

This journal club meets once monthly. Each meeting, one participant chooses, along with his/her mentor, an original research article and leads the discussion. Articles deal with any aspect of the interactions between xenobiotics and man, spanning articles of fundamental laboratory-based science to clinical trials. This journal club will be of interest to graduate students in pharmacology, postdoctoral students in pharmacology, and trainees in clinical pharmacology. *Register in fall quarter only (1 cr./year). Attendance required fall, winter and spring.*

MPET 8300f. DRUG DESIGN AND DISCOVERY PART I. (1.5 cr/qtr, A-F; offered odd years; for basic science degree candidates) Prendergast, Pang

Introduction to interdisciplinary principles and methods used in modern drug design and discovery. Part I covers basic principles and methods for identification of targets and their drug leads.

MPET 8301w. DRUG DESIGN AND DISCOVERY PART II. (1.5 cr/qr, A-F; offered even years; for basic science degree candidates) Prendergast, Pang
Part II includes advanced principles and methods for optimization of drug leads and examples of using the introduced principles and methods.

MPET 8400su. INTRODUCTION TO PRINCIPLES OF PHARMACOKINETICS. (1 cr; A-F) Berg
This 11-week course will focus on the qualitative and quantitative description of the kinetics of drug absorption, distribution and elimination. Learners will gain a basic and practical understanding of the physiological factors that influence these processes and will develop the skills necessary to fine tune dosing regimens for the purpose of optimizing drug levels. Rigorous mathematical derivation of important concepts will be minimized. This course will prepare learners to work in the pharmaceutical industry or take the board examination in clinical pharmacology.

MPET 8655f. MECHANISMS OF CELL GROWTH AND DEATH. (2 cr; A-F; offered even years; prereq Core 6100, 6150 and 6250 or consent of instructor) Karnitz, Kaufmann
This tutorial provides in-depth coverage of a series of cellular signaling pathways including those activated by receptor tyrosine kinases, cell death receptors, and DNA damage. Specific topics include receptor tyrosine kinases and the Ras and phosphatidylinositol 3-kinase pathways, cell death receptors and caspase activation, and the ATM/ATR-dependent signaling pathways. Alterations in the signaling pathways in disease states are discussed.

MPET 8700f,w,s. APOPTOSIS JOURNAL CLUB. (1 cr/yr; S-N) Kaufmann
The course is a journal club reviewing recent articles on the cellular mechanisms of apoptosis. An emphasis is placed on reviewing articles describing new, universal molecular and biochemical pathways of apoptosis. The course meets monthly throughout the year. No prerequisites are required. *Register in fall quarter only (1 cr./year). Attendance required fall, winter and spring.*

MPET 8800f,w,s. RESEARCH SEMINARS IN PHARMACOLOGY. (1 cr/yr; S-N) Chen
The purpose of this course is to provide a forum for development of graduate speaking skills in a seminar setting. Students prepare talks presented to students, faculty, fellows, and research technicians. *Register in fall quarter only (1 cr./year). Attendance required fall, winter and spring.*

MPET 8802w. CARDIOVASCULAR BIOLOGY AND MOLECULAR PHARMACOLOGY. (2 cr; A-F; consent of instructor is required; offered odd years starting 2007) Terzic
Lectures, discussions, and demonstrations on the cellular basis of action of drugs on heart muscle.

MPET 8805s. DRUG METABOLISM, PHARMACOGENOMICS AND CARCINOGENESIS. (2 cr; A-F) Weinshilboum, Ames
Principles of disposition of drugs in biological systems. Lectures on absorption, distribution, excretion, and metabolic transformation of drugs; descriptions of enzyme systems and factors affecting them.

MPET 8812s. TUTORIAL IN RECEPTOR BIOLOGY. (2 cr; S-N) Brimijoin
Student-led discussions and presentations on current topics in receptor biology (runs concurrently with Core 6450).

MPET 8813w. NEURODEGENERATION: PATHOPHYSIOLOGY AND THERAPEUTICS. (2 cr; A-F; offered odd years starting 2007) McMurray
This course will cover concepts and current literature relating to the cause and cure of neurodegeneration.

MPET 8814w. CELLULAR PHARMACOLOGY OF AGENTS THAT TARGET CANCER AND AIDS. (2 cr; A-F; offered even years) Kaufmann
This tutorial will examine the mechanisms of action of selected pharmacological agents at the cellular and subcellular level. Drug targets to be examined during the quarter will include plasma membrane receptors,

receptor tyrosine kinases, Janus kinases, protein farnesyl transferase, other enzymes involved in signal transduction and intermediary metabolism, microtubules, HIV transcriptase and the proteasome. Emphasis will be placed on: a) understanding the variety of experimental approaches that are applicable to the study of drug action in different subcellular compartments and, b) developing an ability to critically evaluate recent literature.

Research

MPET 8801f,w,s,su. RESEARCH IN MOLECULAR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS. (S-N) Staff

Directed research projects for Ph.D. students under the supervision of a faculty advisor.